WHAT IS CLAIMED IS:

1. A silicon-backed microdisplay comprising:

a silicon die;

a silicon-side conductive layer disposed on the silicon die;

a silicon-side passivation layer disposed on the silicon-side conductive layer;

a cover glass;

a glass-side conductive layer disposed on the cover glass;

a glass-side passivation layer of a predetermined material and thickness disposed on the glass-side conductive layer; and

liquid crystal material sandwiched between the glass-side passivation layer and the silicon-side passivation layer;

wherein the thickness and material of the glass-side passivation layer are predetermined to improve the work function balance between a combination of the glass-side conductive layer and the glass-side passivation layer and a combination of the silicon-side passivation layer and the silicon-side conductive layer,

thereby providing a silicon-backed microdisplay with reduced visible flicker.

2. The silicon-backed microdisplay of claim 1 wherein the silicon-side conductive layer is formed of aluminum, the silicon-side passivation layer is formed of silicon dioxide and silicon nitride, and the glass-side conductive layer is formed of indium-tin-oxide.

3. The silicon-backed microdisplay of claim 2 wherein the glass-side passivation layer includes SiO_2.

4. The silicon-backed microdisplay of claim 2 wherein the glass-side passivation layer includes Al_2O_3.

5. The silicon-backed microdisplay of claim 2 wherein the glass-side passivation layer includes BeO.

6. The silicon-backed microdisplay of claim 2 wherein the glass-side passivation layer includes MgF_2.

7. The silicon-backed microdisplay of claim 2 wherein the glass-side passivation layer material includes a material selected from the oxide material group consisting of CeO_2, In_2O_3, MgO, SnO_2, Ta_2O_5, TiO_2, Y_2O_3, ZnO, and any combinations thereof.

8. The silicon-backed microdisplay of claim 1 wherein the predetermined thickness of the glass-side passivation layer is in the range of 300 angstroms to 900 angstroms.

9. The silicon-backed microdisplay of claim 1 wherein the work function balance is less than 0.5 eV.

10. The silicon-backed microdisplay of claim 1 wherein the work function balance is less than 0.3 eV.

11. The silicon-backed microdisplay of claim 1 wherein the glass-side passivation layer improves the work function balance by at least 0.1 eV.

12. A silicon-backed microdisplay comprising:

a silicon die;

a silicon-side conductive layer formed of aluminum disposed on the silicon die;

a silicon-side passivation layer formed of silicon dioxide and silicon nitride, the silicon-side passivation layer disposed on the silicon-side conductive layer;

a cover glass;

a glass-side conductive layer formed of indium-tin-oxide disposed on the cover glass;

a glass-side passivation layer disposed on the glass-side conductive layer; and

liquid crystal material sandwiched between the glass-side passivation layer and the silicon-side passivation layer;

wherein the thickness and material of the glass-side passivation layer are predetermined to improve the work function balance between a combination of the glass-side conductive layer and the glass-side passivation layer and a combination of the silicon-side passivation layer and the silicon-side conductive layer.

thereby providing a silicon-backed microdisplay with reduced visible flicker.

13. The silicon-backed microdisplay of claim 12 wherein the glass-side passivation layer includes SiO_2.

14. The silicon-backed microdisplay of claim 12 wherein the glass-side passivation layer includes Al_2O_3.

15. The silicon-backed microdisplay of claim 12 wherein the glass-side passivation layer includes BeO.